

REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 17-26 and 28-44 are pending in the present application. No claims are amended, added, or canceled by the present response.

In the outstanding Office Action, Claims 17-19, 21-26, and 28-44 were rejected under 35 U.S.C. § 103(a) as unpatentable over Li et al. (U.S. Patent No. 5,473,599, herein "Li") in view of Tavallaei et al. (U.S. Patent No. 6,105,146, herein "Tavallaei"); Claim 20 was rejected under 35 U.S.C. § 103(a) as unpatentable over Li, Tavallaei, and Nguyen (U.S. Patent No. 5,506,790); Claims 22-26 and 28-44 were rejected under 35 U.S.C. § 103(a) as unpatentable over Li, Tavallaei, Nguyen, and Moore (U.S. Patent No. 5,475,846); Claims 17-19, 21-26, and 28-44 were rejected under 35 U.S.C. § 103(a) as unpatentable over Coile et al. (U.S. Patent No. 6,108,300, herein "Coile"); Claim 20 was rejected under 35 U.S.C. § 103(a) as unpatentable over Coile, Tavallaei, and Nguyen; Claims 22-26 and 28-44 were rejected under 35 U.S.C. § 103(a) as unpatentable over Coile, Tavallaei, Nguyen, and Moore; Claims 17-21 and 39-41 were rejected under 35 U.S.C. § 102(e) as anticipated by Cummings et al. (U.S. Patent No. 6,240,087, herein "Cummings"); and Claims 22-26, 28-38, and 42-44 were rejected under 35 U.S.C. § 103(a) as unpatentable over Cummings in view of Moore, all of which are respectfully traversed for the following reasons.

Briefly recapitulating, independent Claim 17 is directed to a redundant routing system that includes, *inter alia*, a first routing unit, a second routing unit, a network interface, and a standby bus interface, both the network interface and the standby bus interface connecting the first and second routing units. The first routing unit is managing input and output data and the second routing unit is configured to detect a failure of the first routing unit by monitoring both the network and the standby bus interfaces using messages sent over both the network

and the standby bus interface. When the second routing unit detects a failure of the first routing unit, the second routing unit is configured to deactivate the first routing unit so that the first routing unit no longer manages the input and output data and the second routing unit is configured to start managing the input and output data. Independent Claim 39 recites similar features as Claim 17.

As discussed in Applicant's specification at page 5, lines 14-23, under some circumstances, the first routing unit encounters problems and refuses to give up control to the second routing unit. To cure this problem, independent Claims 17 and 39 recite that the second routing unit has the capability to deactivate the first routing unit when the second routing unit detects that the first routing unit has encountered a problem.

The outstanding Office Action recognizes that Li does not teach or suggest the second routing unit being configured to deactivate the first routing unit when the second routing unit detects a failure of the first routing unit and also the second routing unit managing the input and output data managed by the first routing unit.

To cure these deficiencies, the outstanding Office Action relies on Tavallaei for showing in Figures 4 and 6 that a monitor logic 225 monitors the operation of components residing on a PCI bus as disclosed at column 20, lines 48-53. As shown in Figure 6, Tavallaei discloses that the monitor logic 225 monitors in step 301 the system for failed devices and when a device has failed as shown in step 303, the monitor logic 225 detects in step 305 whether a spare device is available. If the spare device is available, then the monitor logic 225 initializes in step 311 the spare device and copies contents of the failed device to the spare device, disables the failed device in step 313, and then resumes normal operation in step 315.

In other words, Tavallaei teaches that the monitor logic 225 decides when a device has failed and also decides which spare device to take the place of the failed device. Thus,

Tavallaei requires a master device, a spare device and a monitor logic device that decides when the spare device takes control over the master device while independent Claims 17 and 39 recite that the spare device decides when to take control over the master device.

In this regard, Applicant respectfully submits that Claims 17 and 39 recite first and second routing units with the first routing unit managing input and output data and the second routing unit detecting when the first routing unit has failed, deactivating the first routing unit, and managing the input and output data, which is different from having the monitor logic monitoring the master and spare devices.

Accordingly, it is respectfully submitted that independent Claims 17 and 39 and each of the claims depending therefrom patentably distinguish over Li and Tavallaei, either alone or in combination.

Coile is similar to Li. The outstanding Office Action on page 11, first full paragraph, recognizes that Coile does not teach or suggest a second routing unit configured to deactivate a first routing unit and to manage input and output data. To cure the deficiencies of Coile, the outstanding Office Action relies on Tavallaei. However, Tavallaei was discussed above and does not cure the deficiencies of Coile.

Accordingly, it is respectfully submitted that independent Claims 17 and 39 and each of the claims depending therefrom patentably distinguish over Coile and Tavallaei, either alone or in combination.

Nguyen and Moore have been considered but none of these references cures the deficiencies of Li, Coile, and Tavallaei discussed above. Accordingly, it is respectfully submitted that all claims are also allowable over Li, Tavallaei, Nguyen, Coile, and Moore, either alone or in combination.

The outstanding Office Action states in numbered paragraphs 65 and 66 that Cummings teaches substantially the invention as claimed. The outstanding Office Action

indicates that Cummings discloses the claimed elements at column 44, line 15 to column 46, line 57 and at column 48, line 19 to column 50, line 13.

However, neither of these paragraphs in Cummings teaches or suggests that the second routing unit detects a failure of a first routing unit, deactivates the first routing unit, and manages input and output data as required by independent Claims 17 and 39.

In this respect, it is noted that Cummings discloses at column 44, line 15 to column 46, line 57 that each element of the device of Cummings “transmits identical signals to both copies and receives signals from both copies of the redundant element to which it is connected.”¹ Thus, it appears that Cummings discloses a redundant system that stores in different places the status of each element of the device.

Further, Cummings discloses that an RPC unit 236 makes a selection between A and B busses and Figure 23 shows the RPC unit 236 receiving a signal 16 and sending an output signal 36 to a data formatter 237. It appears that the RPC unit of Cummings has a similar function as the monitor logic 225 of Tavallaei discussed above.

Thus, it is respectfully submitted that Cummings has the same deficiencies as Tavallaei.

Furthermore, it is not clear which element of Cummings corresponds to the claimed first and second routing units, so it is not possible to make a determination whether the second routing unit detects a failure of the first routing unit, deactivates the first routing unit, and manages data of the first routing unit, as required by independent Claims 17 and 39.

In addition, Cummings discloses at column 48, line 19 to column 50, line 13, that an off-line arbiter 273 is slaved to an on-line arbiter 273 and when a hardware fault condition permits both copies to be on-line, an error is registered for access by OBCs 126. Further, Cummings discloses at column 48, lines 19-35, that the off-line arbiter 273 synchronizes to

¹ Cummings, column 44, lines 24-26.

the on-line arbiter 273 and monitors the relationship between the two arbiters 273 with regard to IPL arbitration and an error is reported if the operation of the two arbiters 273 does not match.

However, Cummings is silent about the off-line arbiter 273 *deactivating* the on-line arbiter 273 as required by Claims 17 and 39. On the contrary Cummings discloses the on-line arbiter 273 and the off-line arbiter 273 synchronizing to each other and reporting an error if the operation of the two arbiters does not match.

Therefore, Applicant respectfully submits that Cummings does not teach or suggest a second routing unit that detects a failure of the first routing unit, the second routing unit deactivating the first routing unit, and the second routing unit managing the input and output data as required by independent Claims 17 and 39.

Accordingly, it is respectfully submitted that independent Claims 17 and 39 and each of the claims depending therefrom patentably distinguish over Cummings.

Consequently, in light of the above discussion, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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